

CLAIMS

We claim:

1. A method for a display source to regulate a rate of production by the display source of information for display on a display device, the display source associated with a display memory surface set, the display device associated with a presentation surface set distinct from the display memory surface set, the method comprising:
 - receiving notification of an estimated time when a future frame will be displayed on the display device;
 - preparing display information in the display memory surface set associated with the display source, the preparing based, at least in part, on the estimated time; and
 - releasing the display information for display on the display device.
2. The method of claim 1 wherein the display source is in the set: application program, driver, and operating system.
3. The method of claim 1 wherein preparing display information comprises preparing display information in a back buffer in a flipping chain of the display memory surface set associated with the display source and wherein releasing comprises making the back buffer into a ready buffer in the flipping chain of the display memory surface set.
4. The method of claim 1 wherein the preparing comprises performing an operation in the set: deinterlacing video and interpolating video.
5. The method of claim 1 wherein releasing comprises releasing per-pixel alpha information with the display information.
6. The method of claim 1 further comprising:
 - disabling processing of the display source.

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7. The method of claim 1 further comprising:
- receiving notification of a time when a frame was displayed on the display device, the frame containing at least a portion of the released display information;
 - comparing the received estimated time to the received display time; and
 - if the received display time is later than the received estimated time, then taking corrective action.
8. The method of claim 7 wherein taking corrective action comprises degrading quality when preparing future display information.
9. A computer-readable medium containing instructions for performing a method for a display source to regulate a rate of production by the display source of information for display on a display device, the display source associated with a display memory surface set, the display device associated with a presentation surface set distinct from the display memory surface set, the method comprising:
- receiving notification of an estimated time when a future frame will be displayed on the display device;
 - preparing display information in the display memory surface set associated with the display source, the preparing based, at least in part, on the estimated time; and
 - releasing the display information for display on the display device.
10. A method for a display source to provide information for display on a display device, the display device associated with a display memory surface set, the display device associated with a presentation surface set distinct from the display memory surface set, the method comprising:
- receiving notification that at least a portion of the display information will be occluded on the display device; and
 - if at least a portion of the display information will not be occluded, then preparing non-occluded portions of the display information in the display memory surface set associated with the display source, and releasing the display information.

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11. The method of claim 10 wherein the display source is in the set: application program, driver, and operating system.
12. The method of claim 10 wherein preparing display information comprises preparing display information in a back buffer in a flipping chain of the display memory surface set associated with the display source and wherein releasing comprises making the back buffer into a ready buffer in the flipping chain of the display memory surface set.
13. The method of claim 10 wherein releasing comprises releasing per-pixel alpha information with the display information.
14. A computer-readable medium containing instructions for performing a method for a display source to provide information for display on a display device, the display device associated with a display memory surface set, the display device associated with a presentation surface set distinct from the display memory surface set, the method comprising:
 - receiving notification that at least a portion of the display information will be occluded on the display device; and
 - if at least a portion of the display information will not be occluded, then preparing non-occluded portions of the display information in the display memory surface set associated with the display source, and releasing the display information.

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